Review of Alternative Fuel Vehicles

Are there policies that the state should implement or repeal?

Gasoline Powered vehicles work quite well – Why is there interest in vehicles that run on alternative fuels?

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- 1. Fear of dependence on foreign countries for our fuel
- 2. Search for a fuel that would cost less than gasoline
- 3. Search for a fuel that would emit less (or zero) local pollution
- 4. Search for a fuel that doesn't add to carbon emissions and Global Warming

What else must happen for an alternative fuel vehicle to be successful

- You must have infrastructure to easily refuel it
- Manufacturers have to be willing and able to produce a large number of them
- They have to be affordable (can consider cost of fuel and cost of maintenance, but in the end, just the cost of the vehicle itself has to be good)
- They have to offer enough good features that people want to buy them – not just because they feel there is some moral obligation, but because it is a vehicle they want to own and serves their needs.

What kinds of Alternative Fuel Vehicles are Available?

Alternative Fuels and Advanced Vehicles

More than a dozen alternative fuels are in production or under development for use in alternative fuel vehicles and advanced technology vehicles. Government and private-sector vehicle fleets are the primary users for most of these fuels and vehicles, but individual consumers are increasingly interested in them. Using alternative fuels and advanced vehicles instead of conventional fuels and vehicles helps the United States conserve fuel and lower vehicle emissions.

Biodiesel

Biodiesel is a renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled cooking grease for use in diesel vehicles.

Diesel Vehicles

Electricity

Electricity can be used to power plug-in electric vehicles, which are increasingly available. Hybrids use electricity to boost efficiency.

Hybrid & Plug-In Vehicles

Ethanol

Ethanol is a widely used renewable fuel made from corn and other plant materials. It is blended with gasoline for use in vehicles.

Flexible Fuel Vehicles

Hydrogen

Hydrogen is a potentially emissions-free alternative fuel that can be produced from domestic resources for use in fuel cell vehicles.

Fuel Cell Vehicles

Natural Gas

Natural gas is a domestically abundant gaseous fuel that can have significant fuel cost advantages over gasoline and diesel fuel.

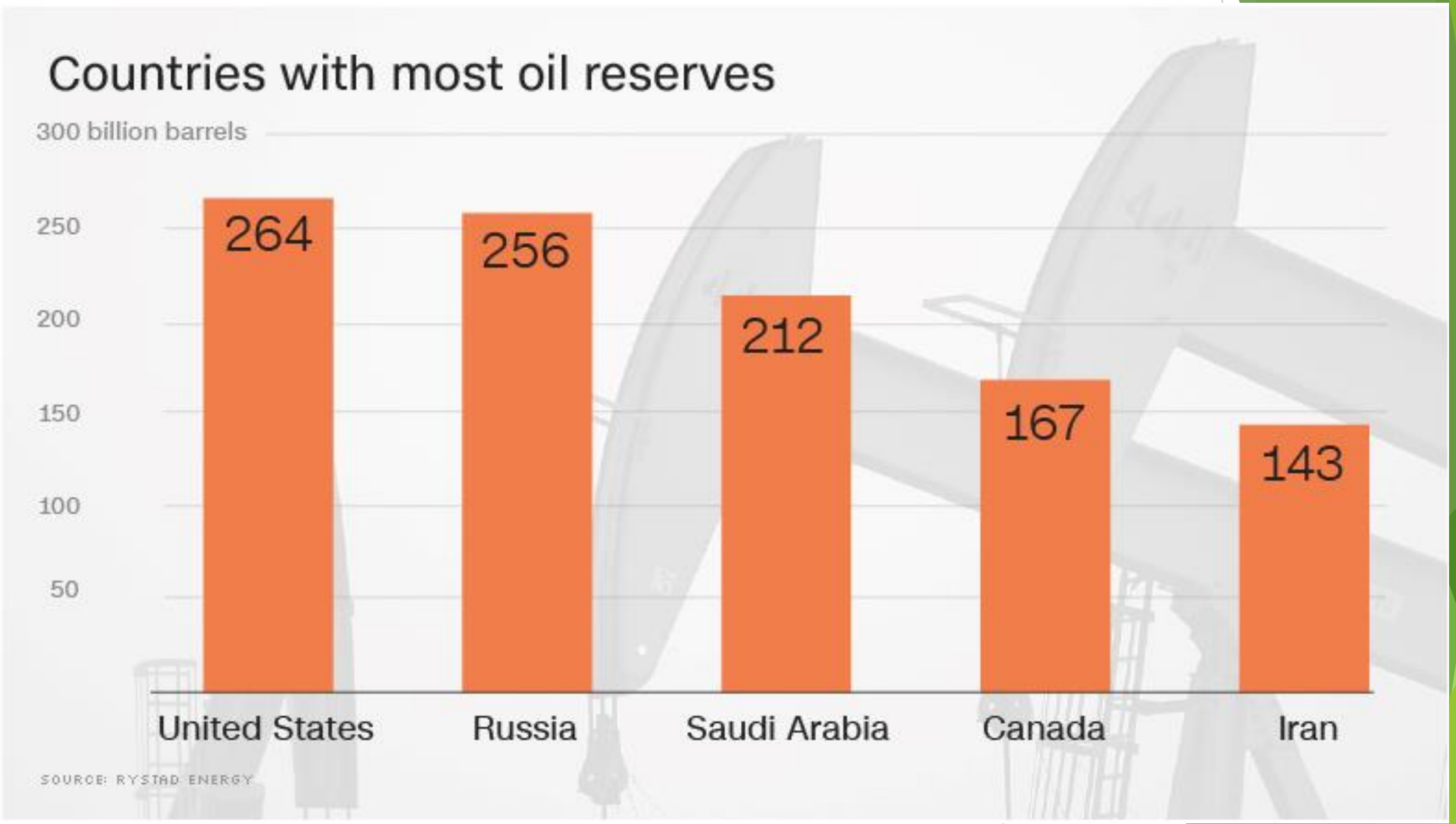
Natural Gas Vehicles

Propane

Propane is a readily available gaseous fuel that has been widely used in vehicles throughout the world for decades.

Propane Vehicles

https://money.cnn.com/2016/07/05/investing/us-untapped-oil/index.html



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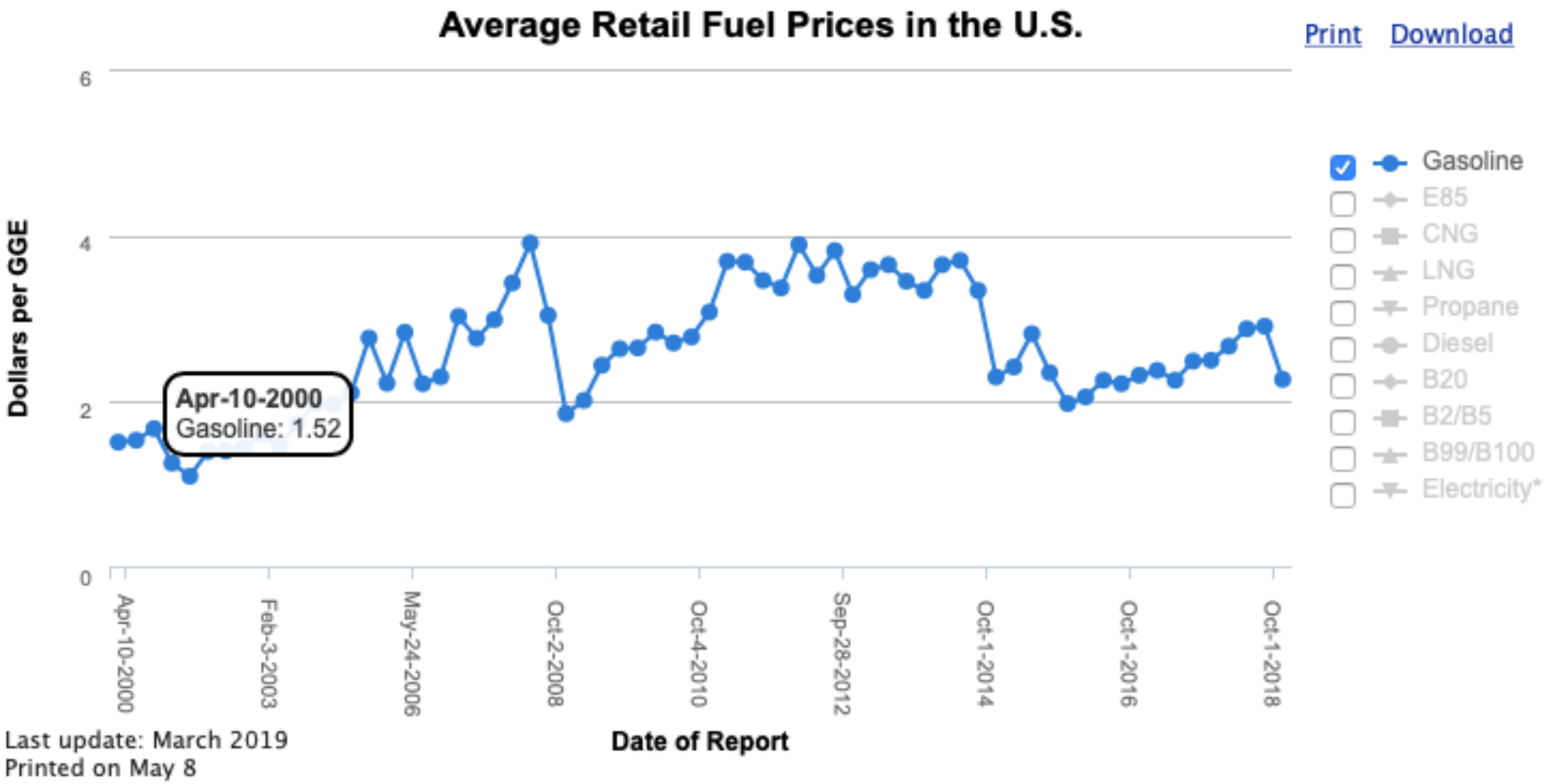
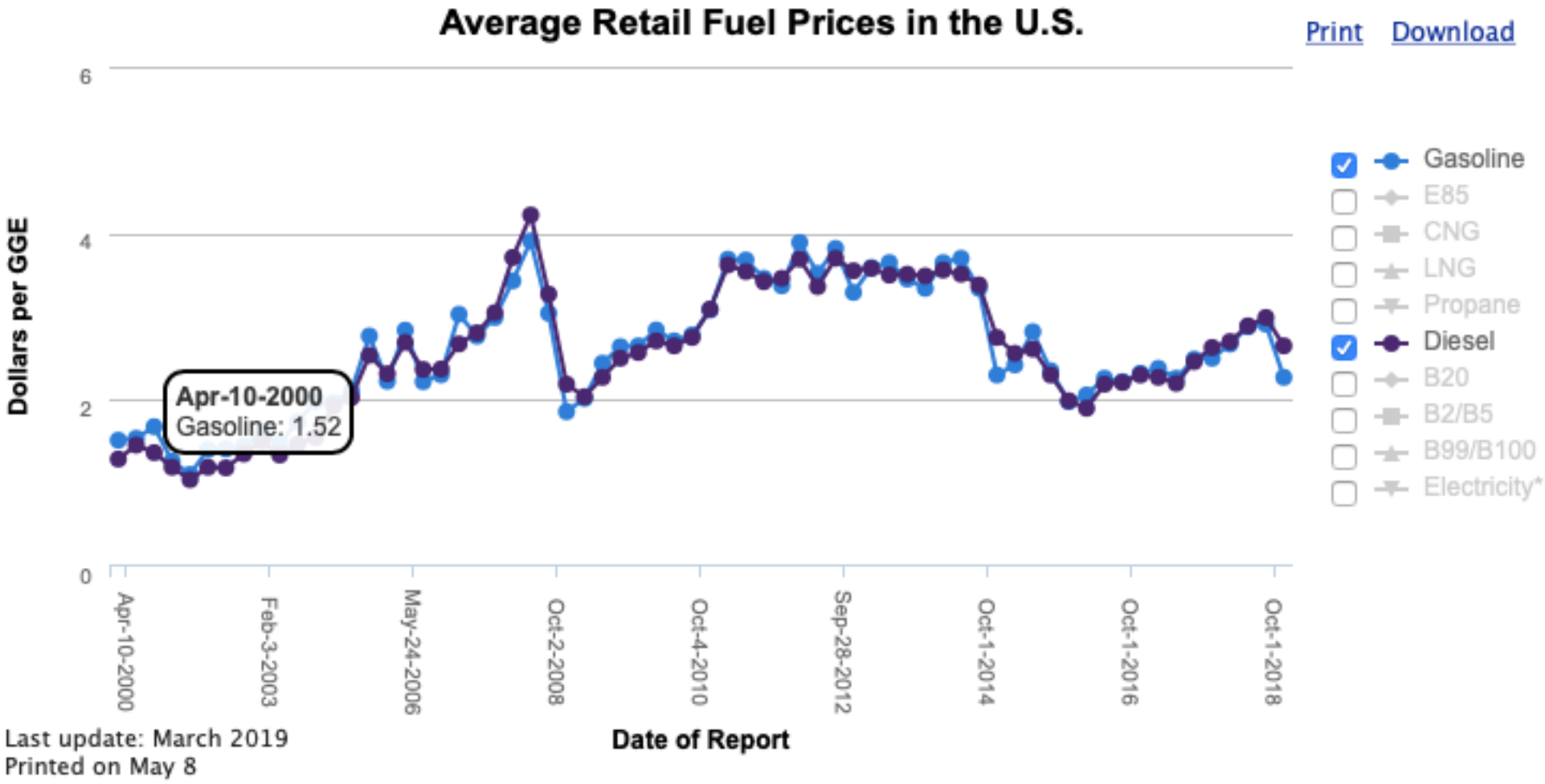
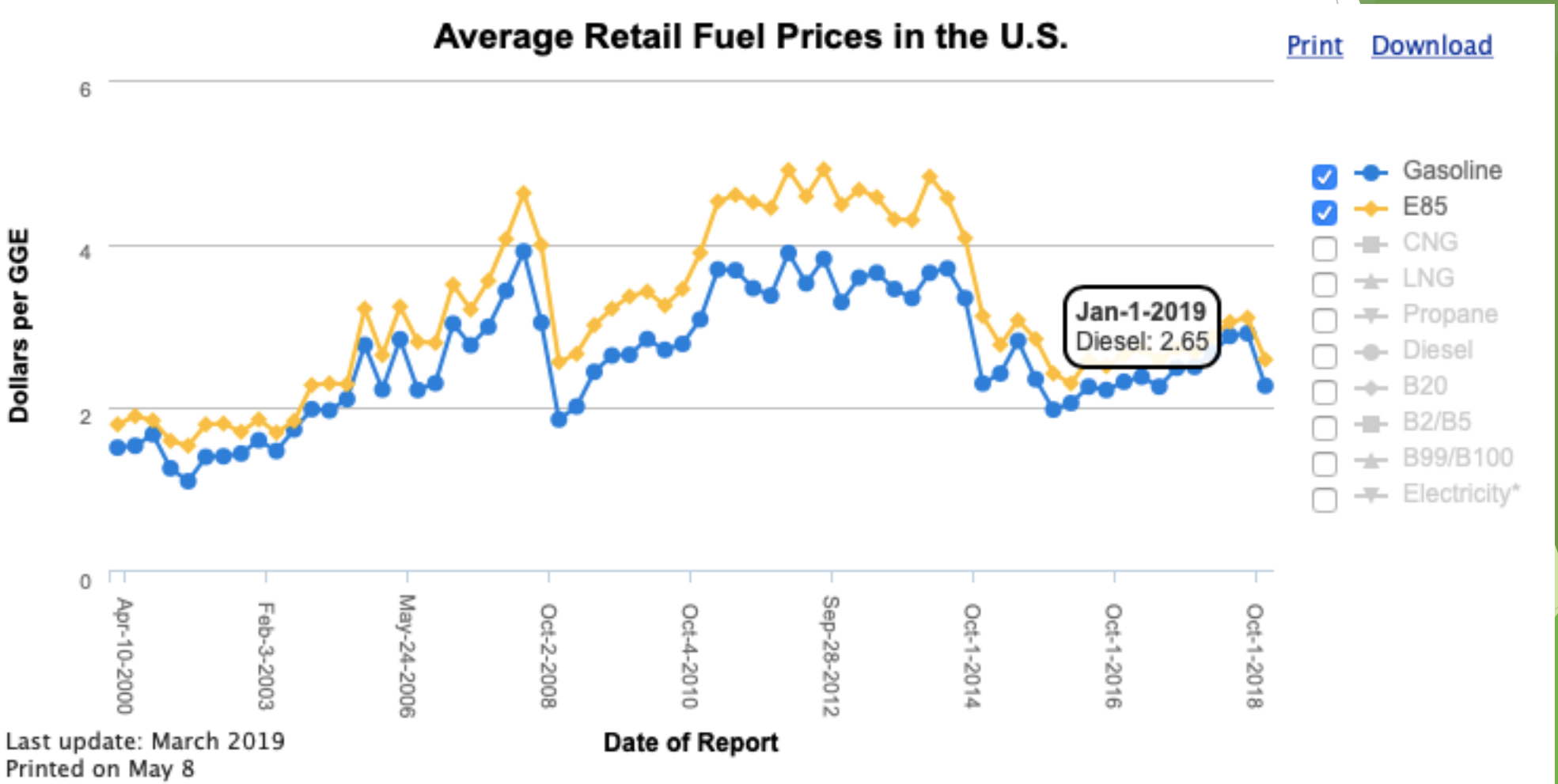


https://afdc.energy.gov/fuels/prices.html


Average Retail Fuel Prices in the U.S.
Print
Download
Dollars per GGE
6
4
2
0
Apr-10-2000
Gasoline: 1.52
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
Feb-3-2003
May-24-2006
Oct-2-2008
Oct-4-2010
Sep-28-2012
Oct-1-2014
Oct-1-2016
Oct-1-2018
Date of Report
Last update: March 2019
Printed on May 8


Average Retail Fuel Prices in the U.S.
Print
Download
Dollars per GGE
6
4
2
0
Jan-1-2019
Diesel: 2.65
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
Feb-3-2003
May-24-2006
Oct-2-2008
Oct-4-2010
Sep-28-2012
Oct-1-2014
Oct-1-2016
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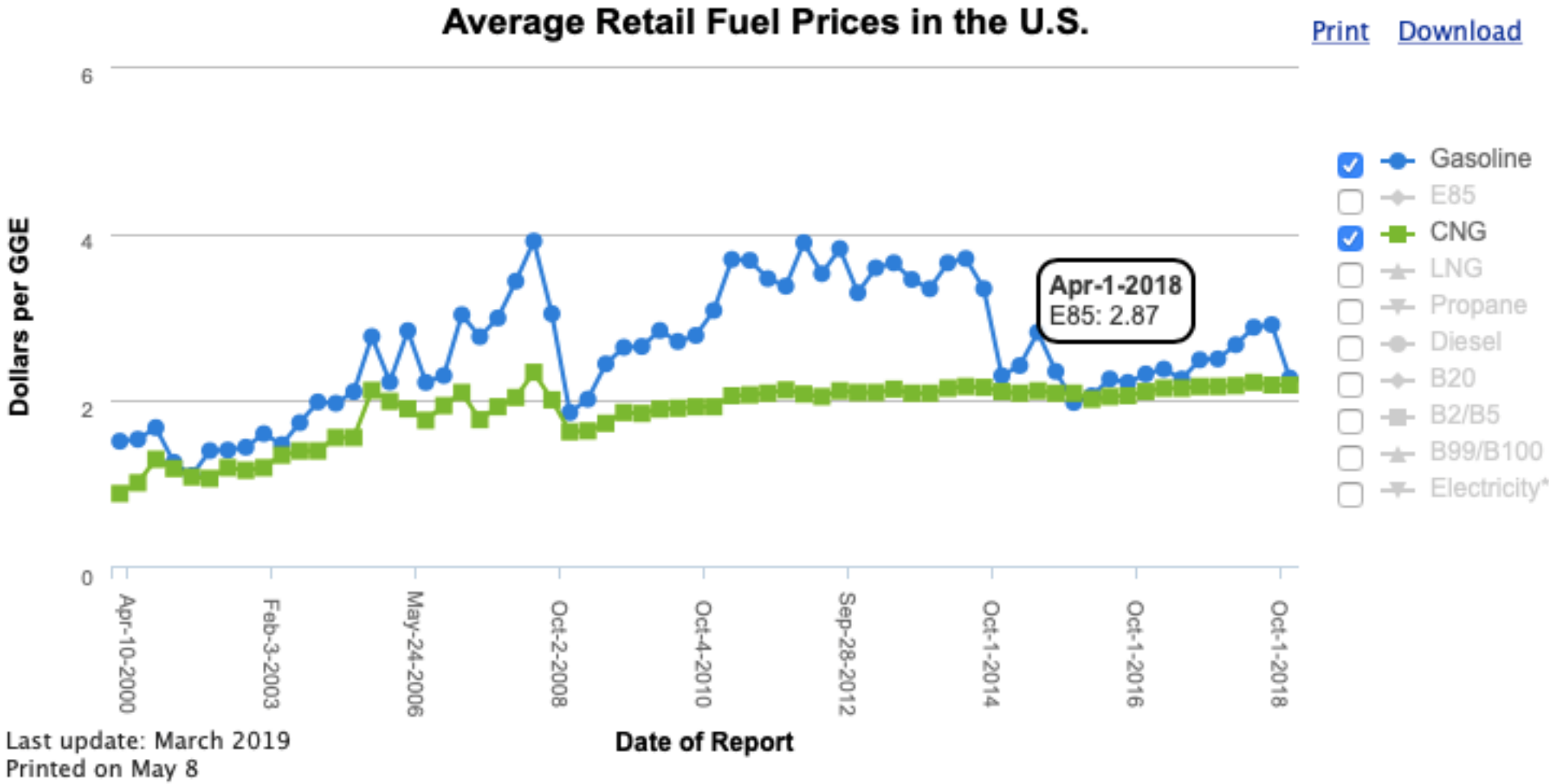
Average Retail Fuel Prices in the U.S.
Print
Download
Dollars per GGE
6
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Apr-1-2018
E85: 2.87
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
Feb-3-2003
May-24-2006
Oct-2-2008
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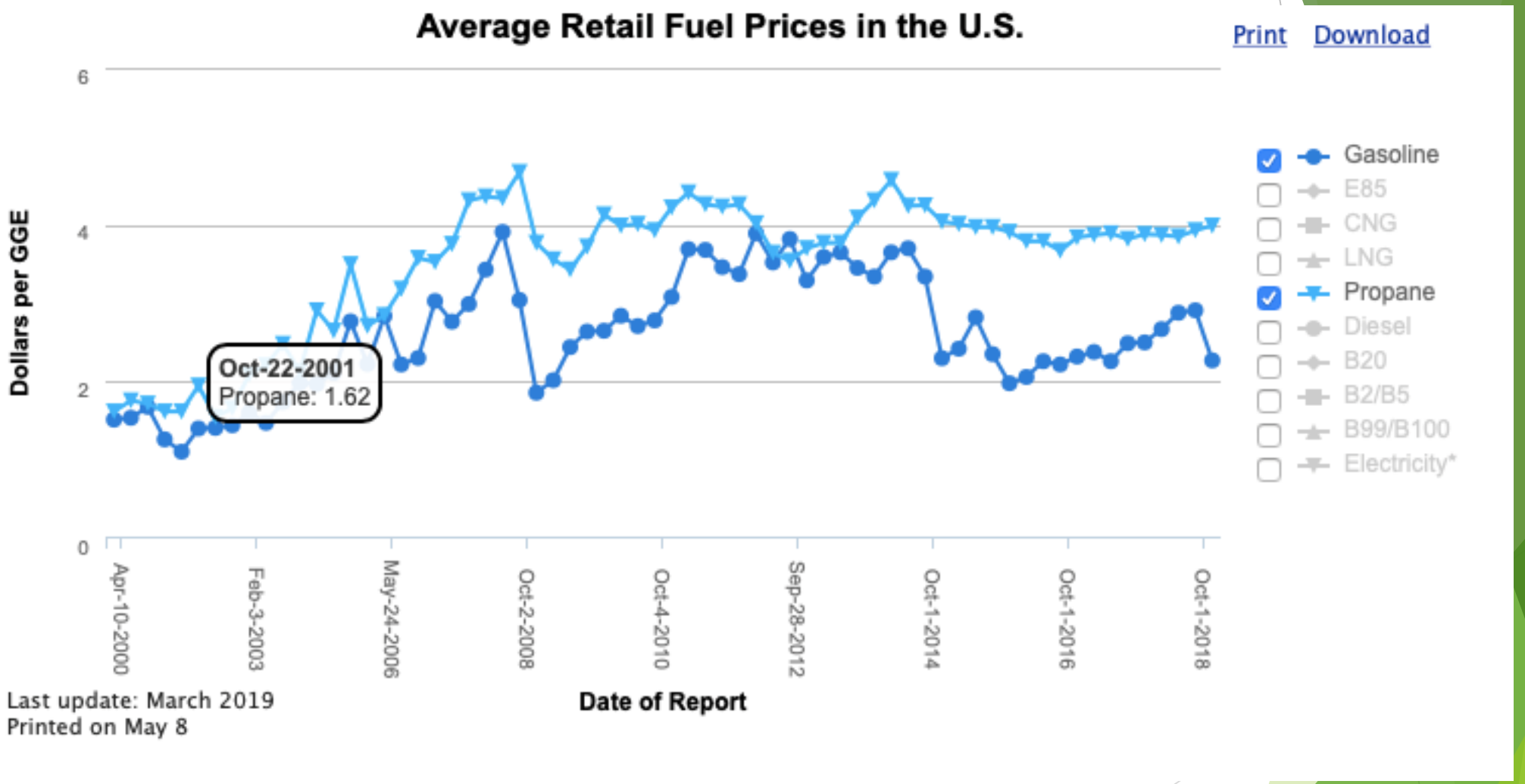
Average Retail Fuel Prices in the U.S.
Print
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Dollars per GGE
6
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Oct-22-2001
Propane: 1.62
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
Feb-3-2003
May-24-2006
Oct-2-2008
Oct-4-2010
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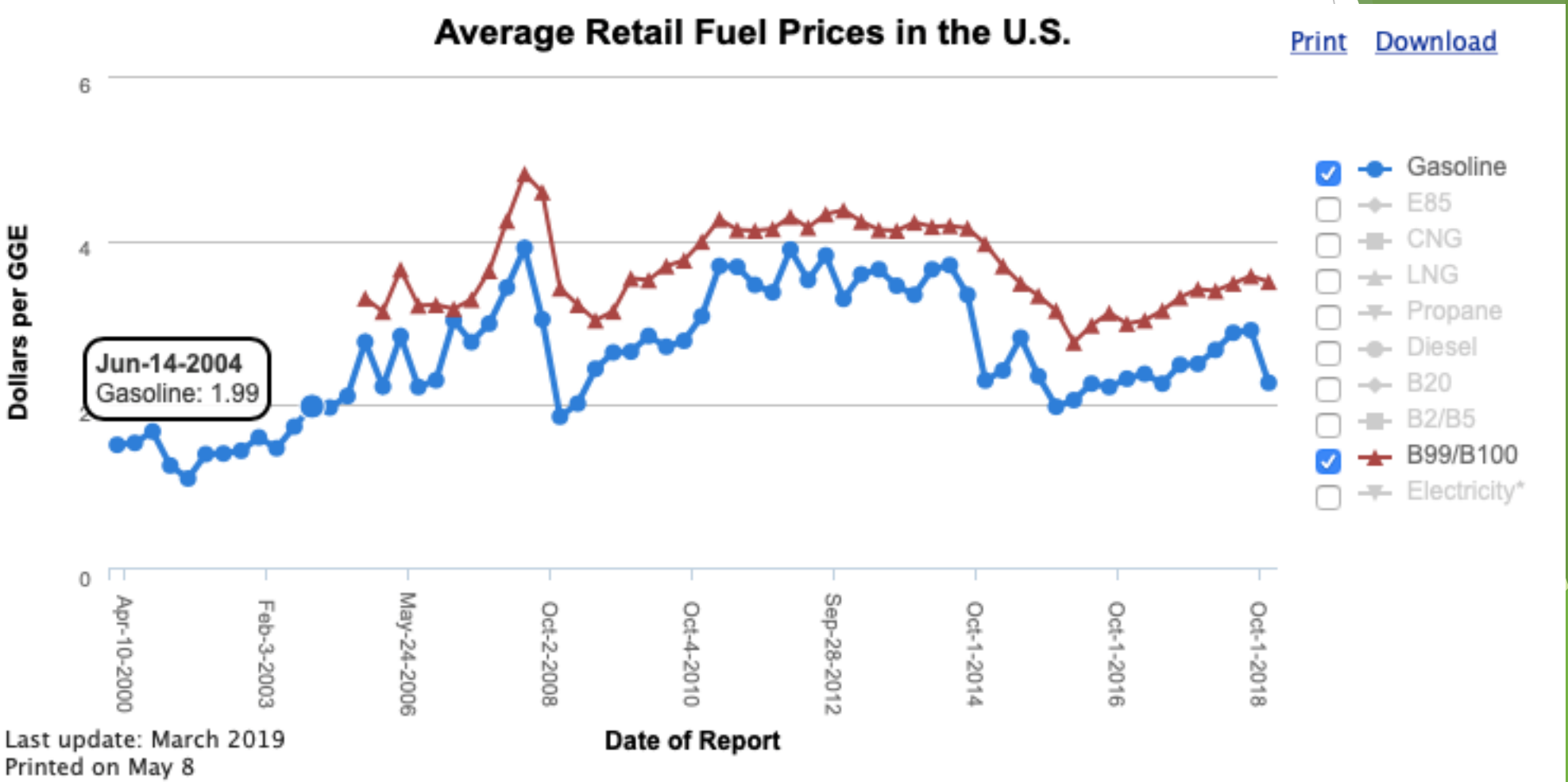
Average Retail Fuel Prices in the U.S.
Print
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Dollars per GGE
6
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Jun-14-2004
Gasoline: 1.99
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
Feb-3-2003
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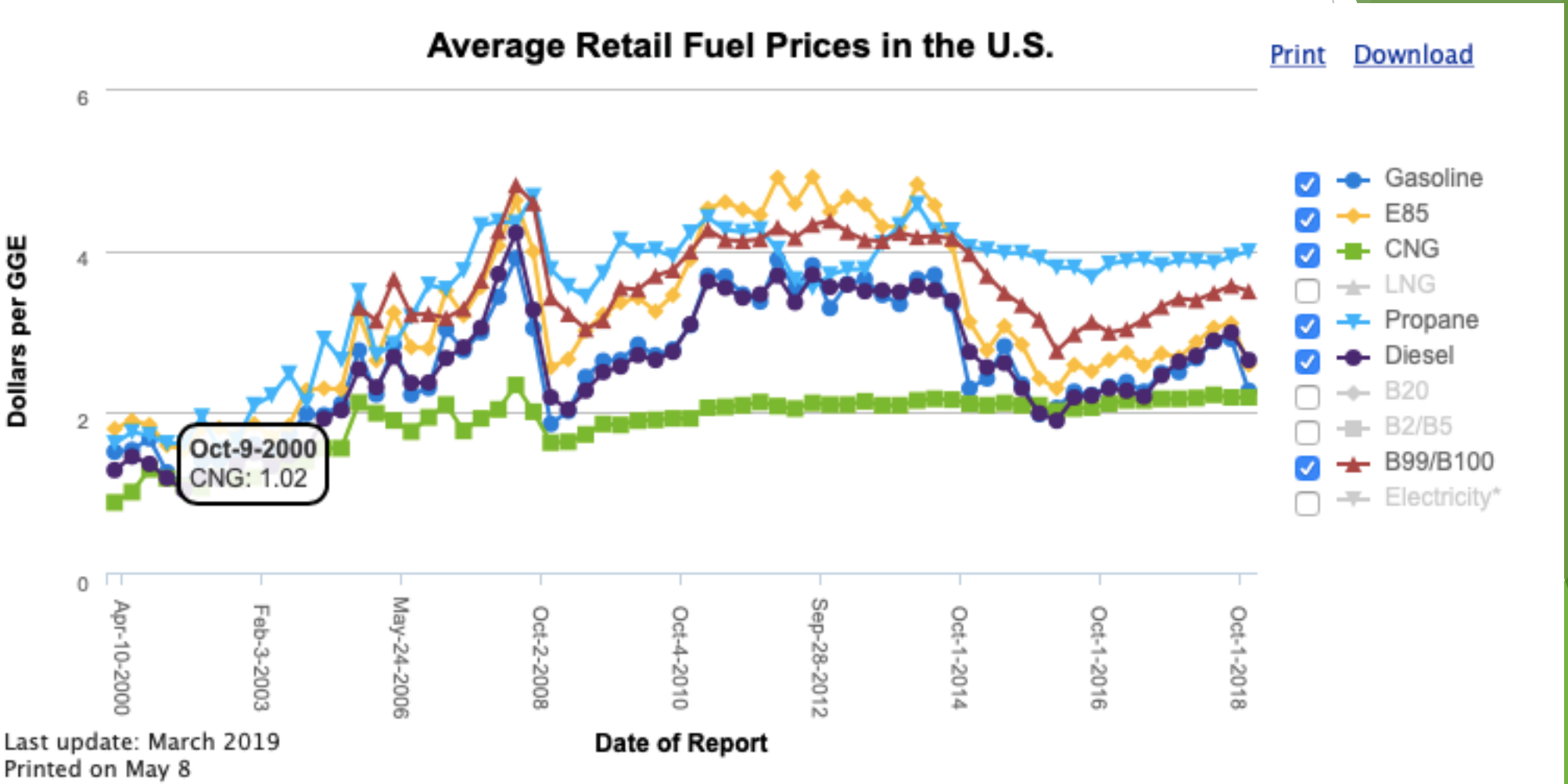
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6
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Oct-9-2000
CNG: 1.02
Gasoline
E85
CNG
LNG
Propane
Diesel
B20
B2/B5
B99/B100
Electricity*
Apr-10-2000
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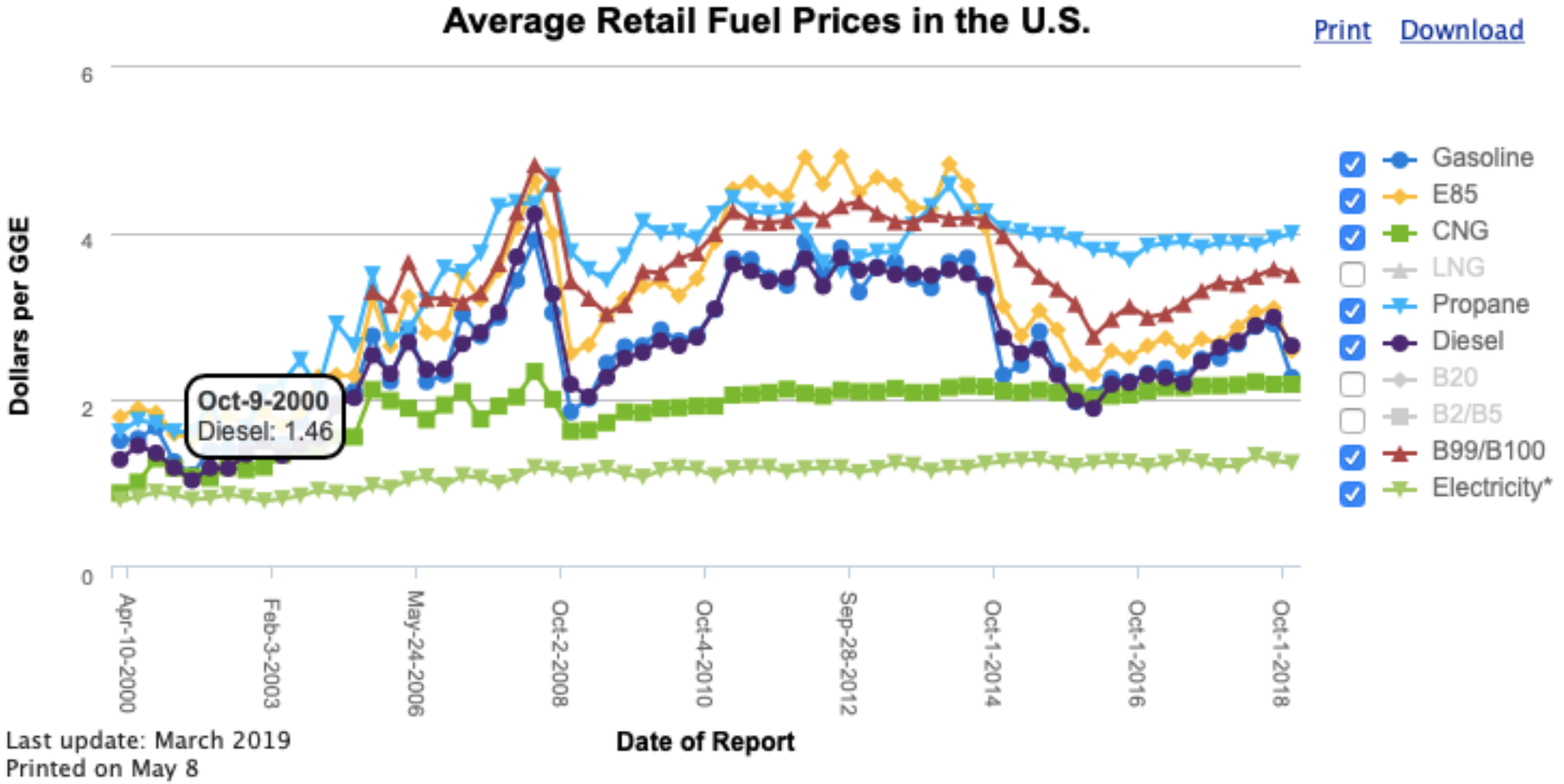

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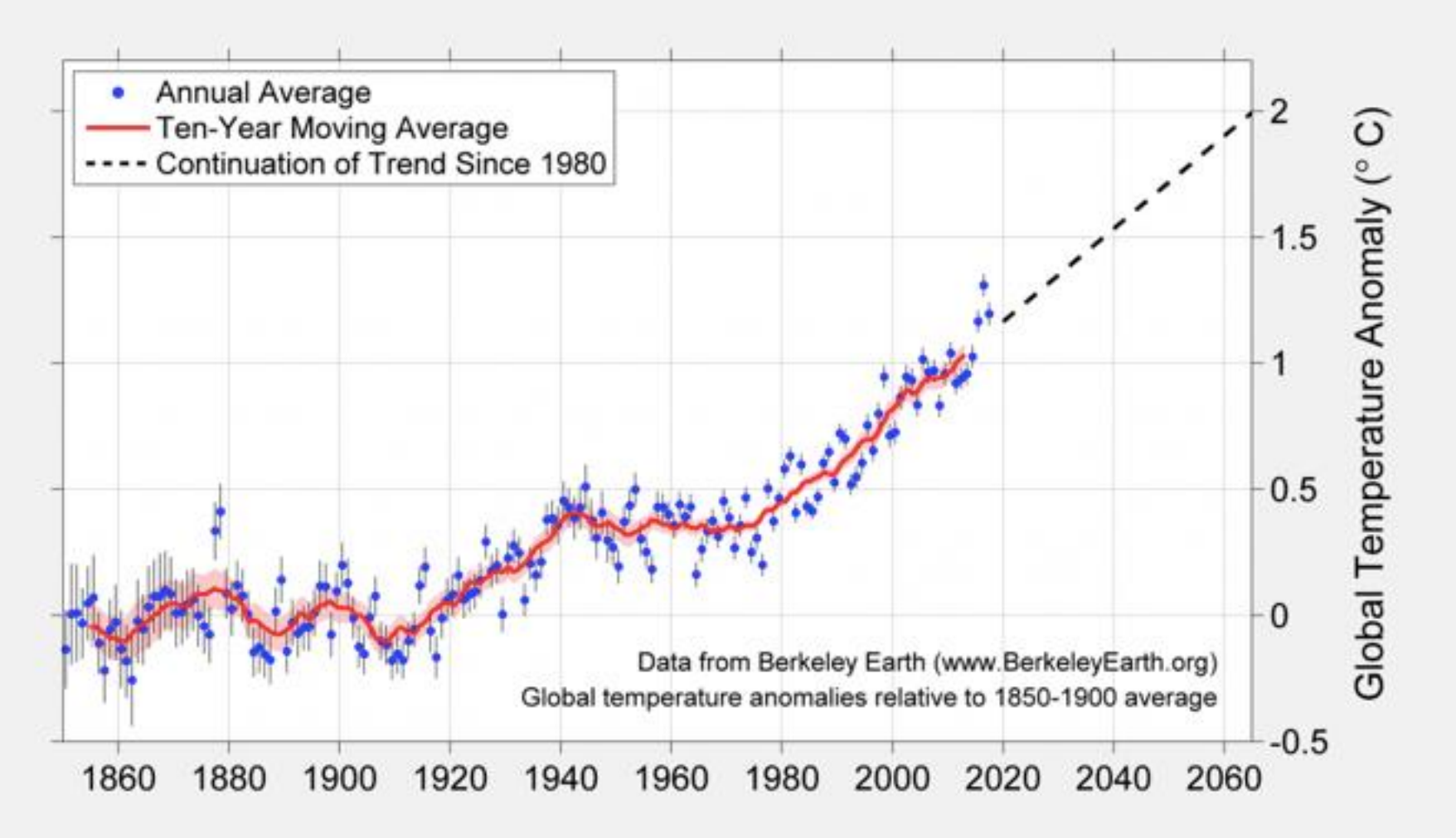
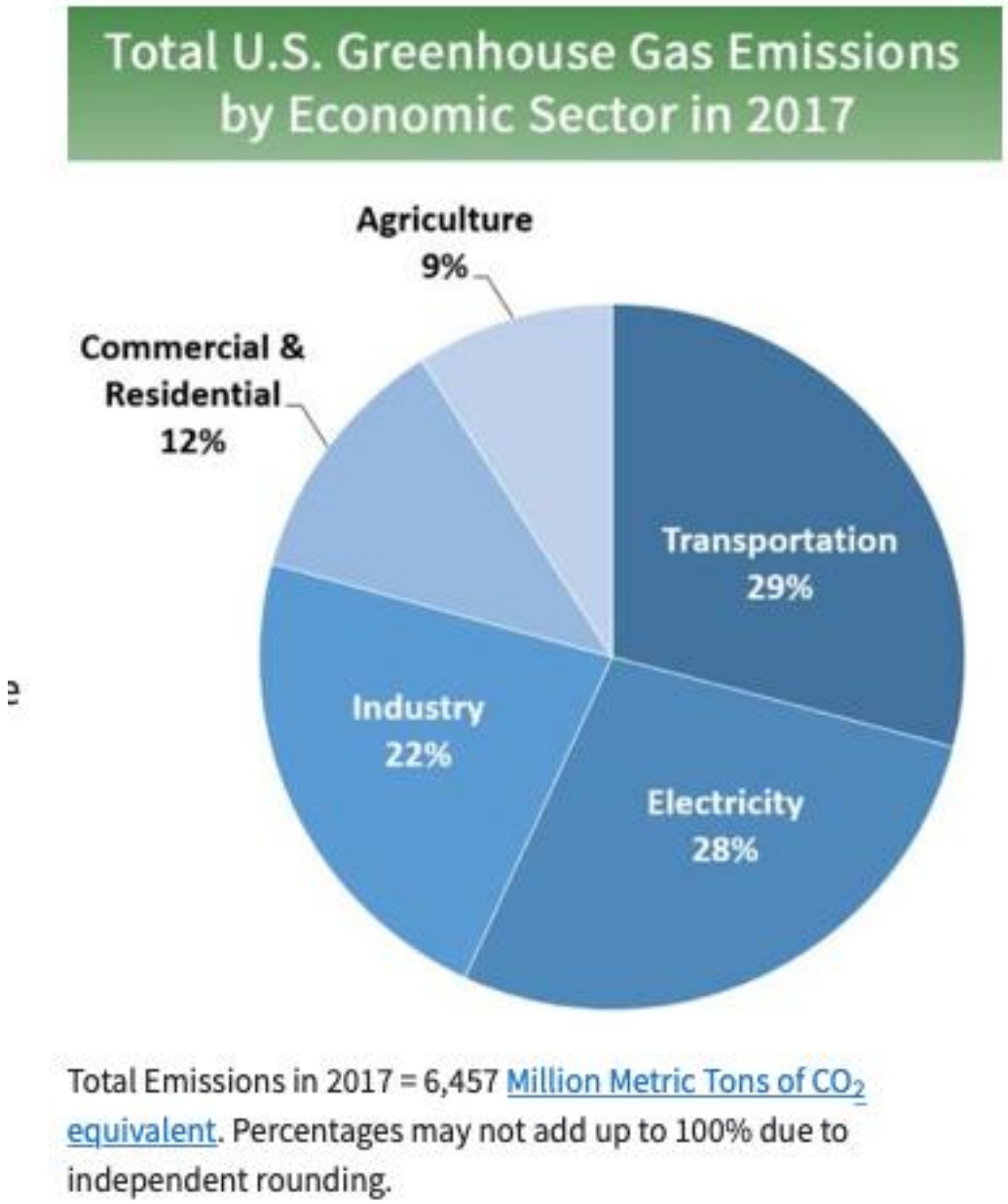
Over the last 50 years- the average temperature of earth has been steadily warming.

- During this time the average temperature in Utah has gone up about 2.5 degrees.
- All of our major scientific organizations agree that this warming is caused by human emissions, mainly CO2.
- All of our scientific organizations agree that this warming will continue and will accelerate (because we are putting out more CO2) unless we reduce our total CO2 emissions.
- Ultimately, any solution will require agreement among multiple nations – but on a state level we can still choose policies that will move in the right direction while not harming our own economy.



http://berkeleyearth.org/global-temperatures-2017/

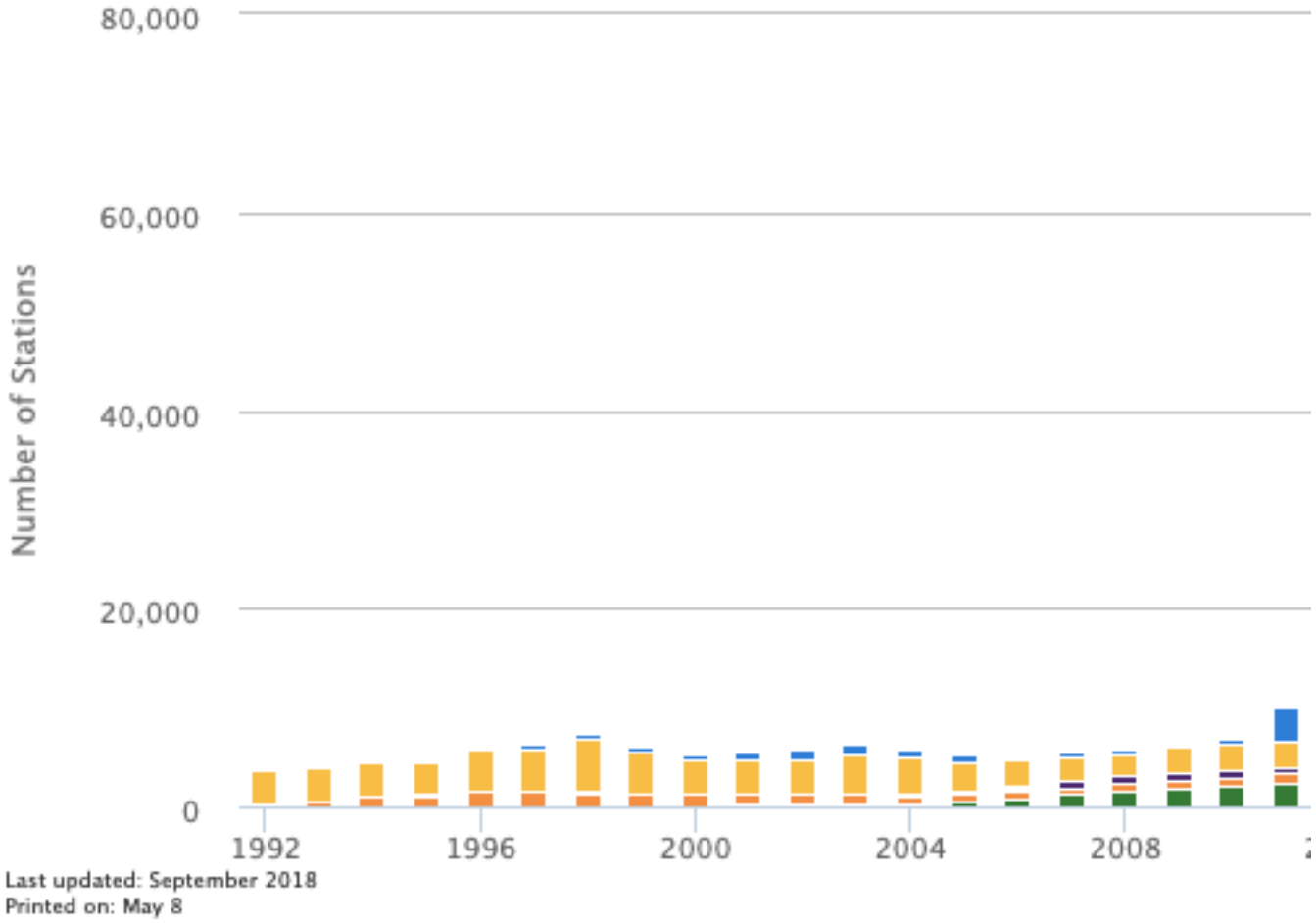


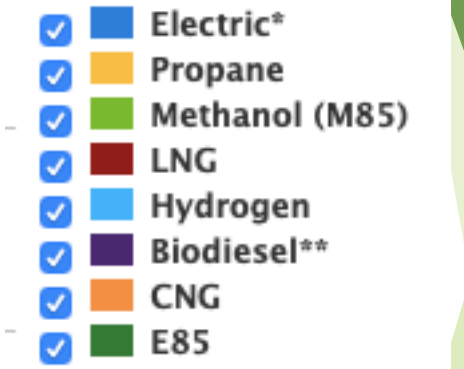
https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

For all alternative fuels – creating a refueling infrastructure is one of the big challenges.

How are they doing?

Number of alternative fuel stations available nationally for various Alternative Fuels 1992 - 2011





U.S. Alternative Fueling Stations by Fuel Type

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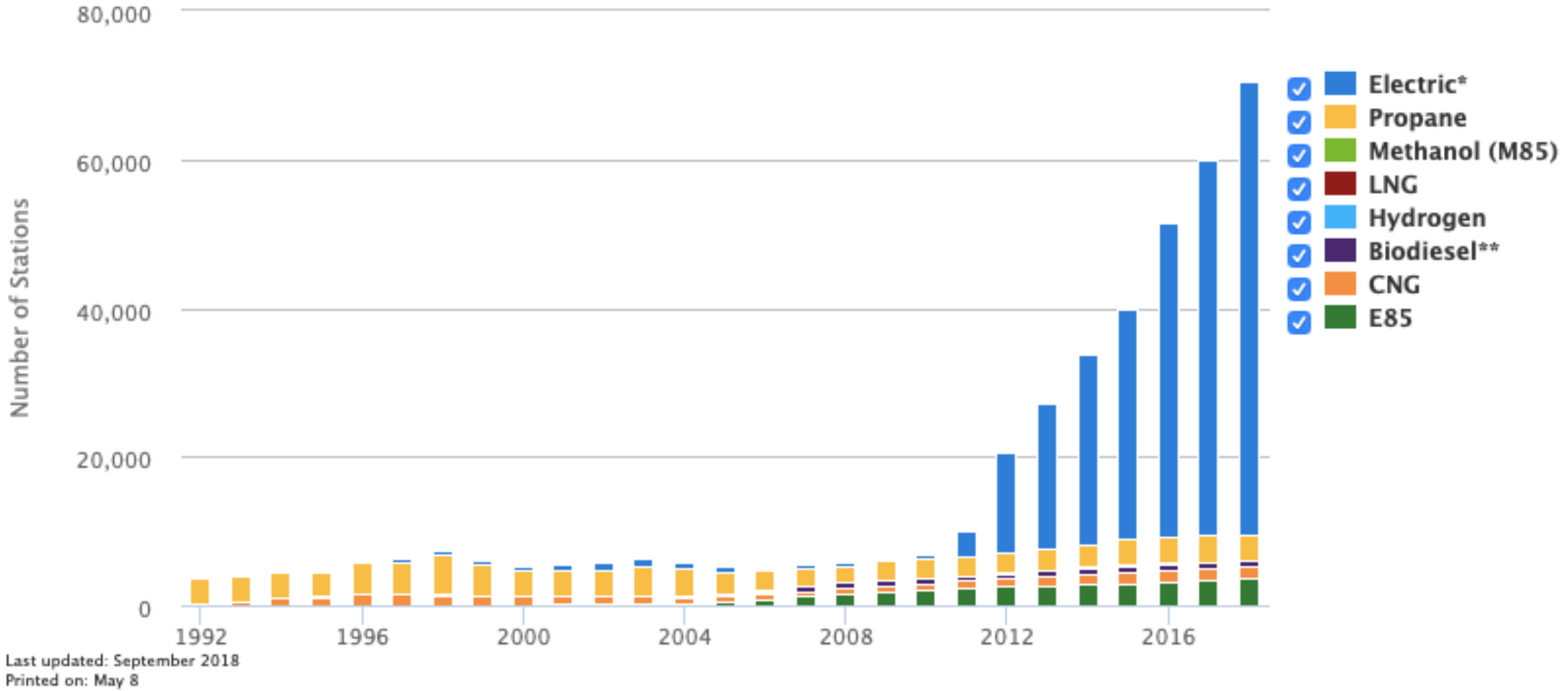

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Printed on: May 8

Source: Alternative Fuels Data Center (AFDC), either directly (www.afdc.energy.gov/fuels/stations_counts.html) or from historical Transportation Energy Data Books (www.osti.gov/bridge/basicsearch.jsp)

Money was appropriated this session for installation of EV refueling infrastructure

Electric Vehicle Charging Stations at State Sites (Rep. Potter)
Installs electric vehicle (EV) charging stations at state-owned facilities.
Requested: $5,830,000 (one-time) Funded: SB 2 - $2,000,000 (one-time)

Electric Vehicle Charging Equipment (Rep. Snow)
Incentivizes businesses and government entities to install electric vehicle charging equipment.
Requested: $4,990,000 (one-time) Funded: SB 2 - $4,990,000 (one-time)

Are major manufacturers willing to invest in and make the alternative cars?

- Natural Gas -- We have about 150,000 vehicles in the US – most of them fleet vehicles.
- Propane – About 200,000 vehicles in the US – most of them fleet vehicles.
- Ethanol – All cars already take E15 ethanol. Some take E85 – but stations only exist in the corn belt. Most don't know they have a car that could use it.
- Biodiesel – Most diesel cars can take B5 or B10. Takes a kit to modify the car to take B100.
- Hydrogen – Less than 100 fueling stations nationwide, almost all in California. A few hydrogen cars are available for purchase
- Electric.....

G.M. Plans New Electric Vehicle Made at Chevy Bolt Plant

Mary T. Barra, the chief executive of General Motors, announcing on Friday that the company would invest $300 million in its plant in Orion Township, Mich.
Bill Pugliano/Getty Images

Why The New Gutsier Nissan Leaf Plus Is Suddenly A Viable Alternative

Peter Lyon Contributor
Transportation

AUTOS

Fiat Chrysler outlines big plans for electric Jeeps and Ram pickup trucks

PUBLISHED TUE, MAR 5 2019 • 7:08 AM EST | UPDATED TUE, MAR 5 2019 • 10:18 AM EST

Paul A. Eisenstein
@DETROITBUREAU

SHARE

RIVIAN ANNOUNCES $500 MILLION INVESTMENT FROM FORD; PARTNERSHIP TO DELIVER ALL-NEW FORD BATTERY ELECTRIC VEHICLE

APR 24, 2019 | DEARBORN, MICH

How many EVs do we have in Utah?

Numerical Growth

Type	Feb-15	Feb-16	Feb-17	Feb-18	Feb-19
EV	1,129	1,646	2,485	3,588	5,526
All Hybrids	25,739	29,513	33,869	38,357	42,770
PHEV					3,542
Gas Hybrid					39,228
Totals	***26,868***	***31,159***	***36,354***	***41,945***	***48,296***
Total Vehicles	***2,241,066***	***2,312,108***	***2,387,589***	***2,477,986***	***2,594,746***

EV/Total Vehicle	0.05%	0.07%	0.10%	0.14%	0.21%

Note: 0.05% is 1/20th of a percent

We current “penalize” owners of electric vehicles by charging them increased registration fees.

Annual Fee Schedule. SB 136 (2018)			
Year	**EV**	**PHEV**	**Gas Hybrid**
2019	$60	$26	$10
2020	$90	$39	$15
2021+	$120	$52	$20

EV = all ‘Electric Vehicles’ like Tesla, Chevy Bolt, Nissan Leaf – All electric, No gas.

PHEV = ‘Plug-in Hybrid electric vehicles’ like Chevy Volt – These run on battery till drained and then gas.

We currently allow use of the HOV lane for certain single driver vehicles

- 2 or more drivers can always go in the HOV lane.
- 1/3 or the drivers in the HOV lane are violators
- You can get a transponder to then pay a toll to use the HOV lane – the number of these is regulated by changing the cost to meet supply and demand
- We provide a C decal to certain drivers who then can use the HOV lane – we currently allow this for gas-hybrid electrics, Plug in hybrid electrics and battery electric vehicles.

C decal rules

- We have around 6600 in circulation
- 80-90 people apply every month, but very few are given a decal because we have a limit of how many are allowed
- Once you have a C decal, it is good for the entire life of the vehicle. Some people are hanging on to cars they otherwise would sell because they lose the decal if they sell the car.
- I think there should be a time limit, and that it should be limited to only PHEVs and BEVs. Gas hybrids are just regular cars that get good gas milage.

Take home points about alternative fuel vehicles:

- In the last 50 years we have tried (and given government incentives to) A LOT of different kinds of alternative fuel vehicles.
- There are several kinds on the road today that work fine – but none so far have replaced gasoline vehicles in any substantial way
- Electric Vehicles may be different – they have a very different profile than previous attempts, by far the largest fueling infrastructure of any of the alternatives, and every major manufacturer has either a current vehicle that you can buy, or stated plans for large investments.

Policies to consider regarding alternative fuel vehicles

- 1. Close follow up of the use and progress of the money committed to EV charging infrastructure
- 2. Consideration of use of some of the money used for charging infrastructure for marketing to make people aware of the improvements in availability of charging infrastructure
- 3. Consideration of updating the C-Decal program to best use the HOV lane
- 4. Adjust registration fees so that it doesn't appear that we are trying to penalize electric vehicles.
- 5. Consideration of Tax credits for Electric Vehicles